UNITED STATES PATENT AND TRADEMARK OFFICE

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HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

EXAMINER
WOZNIAK, JAMES S

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte GREGORY CIURPITA,
SUNIL K. GUPTA, and PRABHU RAGAVAN

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Appeal 2007-4464
Application 09/846,200
Technology Center 2600

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Decided: June 12, 2008

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Before ROBERT E. NAPPI, CARLA M. KRIVAK,
and KARL D. EASTHOM *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from a final rejection of

claims 1-27. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF CASE

Appellants' claimed invention is an automatic speech recognition method and system that recognizes speech in systems that accept speech (Cl. 1; Spec. ¶[0001]). The method and system detect utterances or subgroups of speech units between natural pauses for recognition. The recognition result is immediately repeated back to the user for verification where it can be interrupted by the user prior to being fed back to the user (Spec. ¶[0009]).

Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A method of recognizing speech in systems that accept speech input, comprising:

(a) receiving at least a current subgroup of speech units that form part of a complete speech sequence that is to be input from a user, the complete speech sequence being embodied as at least one of a word and a password comprised of a plurality of alphanumeric characters, the subgroup being one or more alphanumeric characters of the complete speech sequence;

(b) detecting a natural pause between input subgroups such that a pause between two alphanumeric characters in a given subgroup or a pause between one alphanumeric character and a subgroup are detected;

(c) recognizing the speech units of the subgroup to provide a recognition result; and

(d) immediately feeding back the recognition result for verification by the user, wherein the recognition result is interrupted by the user prior to being fed back for verification.

REFERENCES

Gerson	US 4,870,686	Sep. 26, 1989
Hou	US 5,325,421	Jun. 28, 1994
Ammicht	US 6,246,986 B1	Jun. 12, 2001
		Filed Dec. 31, 1998
Ladd	US 6,269,336 B1	Jul. 31, 2001
		Filed Oct. 2, 1998
Vanbuskirk	US 6,505,155 B1	Jan. 7, 2003
		Filed May 6, 1999

Lars Bo Larsen, *Investigating a Mixed-Initiative Dialogue Management Strategy*, IEEE, 1997, pp. 65-71.

The Examiner rejected the claims as follows:

1. Claims 1-5, 10-15, 18, 20, 21, and 25-27 stand rejected under 35 U.S.C. § 103(a) based upon the teachings of Gerson and Ammicht;

2. Claims 6, 17, and 19 stand rejected under 35 U.S.C. § 103(a) based upon the teachings of Gerson, Ammicht, and Hou;

3. Claims 7, 8, 22, and 23 stand rejected under 35 U.S.C. § 103(a) based upon the teachings of Gerson, Ammicht, and Vanbuskirk;

4. Claims 9 and 24 stand rejected under 35 U.S.C. § 103(a) based upon the teachings of Gerson, Ammicht, and Larson; and

5. Claim 16 stands rejected under 35 U.S.C. § 103(a) based upon the teachings of Gerson, Ammicht, and Ladd.

Appellants contend that the barge-in feature provided by Ammicht and not found in Gerson is not the same as the recitation in claim 1 of "immediately feeding back the recognition result for verification...wherein the recognition result is interrupted by the user prior to being fed back for verification" (Appeal Br. 8; Reply Br. 3).

ISSUE(S)

1. Did the Examiner err in rejecting claims 1-5, 10-15, 18, 20, 21, and 25-27 under 35 U.S.C. § 103(a) as obvious over the combination of Gerson and Ammicht?

2. Did the Examiner err in rejecting claims 6, 17, and 19 under 35 U.S.C. § 103(a) as obvious over the combination of Gerson, Ammicht, and Hou?

3. Did the Examiner err in rejecting claims 7, 8, 22, and 23 under 35 U.S.C. § 103(a) as obvious over the combination of Gerson, Ammicht, and Vanbuskirk?

4. Did the Examiner err in rejecting claims 9 and 24 under 35 U.S.C. § 103(a) as obvious over the combination of Gerson, Ammicht, and Larson?

5. Did the Examiner err in rejecting claim 16 under 35 U.S.C. § 103(a) as obvious over the combination of Gerson, Ammicht and Ladd?

FINDINGS OF FACT

1.   Appellants' invention is a method or system that recognizes speech by receiving a current subgroup of speech units that form part of a complete sequence input from a user, the sequence being composed of alphanumeric characters (Cl. 1; Abstract).

2.   Appellants' method detects a natural pause between input subgroups. Speech units of the subgroup are then recognized. A recognition result is immediately fed back to the user for verification. The recognition result can be interrupted by the user prior to being fed back for verification by the user (Cl. 1; Spec. ¶[0031]).

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3. Gerson teaches a method for verbally entering digit sequences. A complete digit sequence is formed of one or more partial sequence "strings." The strings are separated by a predetermined pause time interval—an interval of no speech activity (col. 7, ll. 4-10).

4. In Gerson, if the utterances (spoken digit sequences) are incorrectly recognized, the user utters a word such as "CLEAR" or "TERMINATE." If no utterances are recognized, the system asks the user to repeat (col. 7, ll. 20-25 and ll. 26-64; col. 8, ll. 59-64).

5. Ammicht teaches barge-in enablement in a speech recognition system. A barge-in operation is where the user does not wait for a prompt to finish before the user responds (col. 5, ll. 21-28).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). "[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Furthermore,

> 'there must be some articulated reasoning with some
> rational underpinning to support the legal conclusion of
> obviousness'…[H]owever, the analysis need not seek out
> precise teachings directed to the specific subject matter
> of the challenged claim, for a court can take account of
> the inferences and creative steps that a person of ordinary
> skill in the art would employ. *KSR Int'l Co. v. Teleflex*

> *Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*,
> 441 F.3d 977, 988 (Fed. Cir. 2006)).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. at 1734. The Supreme Court reaffirmed that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id.* at 1739.

<div align="center">ANALYSIS</div>

<div align="center">*Claims 1-5, 10-15, 18, 20, 21, and 25-27*</div>

The Examiner finds that Gerson teaches all the features of representative claim 1 except for the recognition result being interrupted by a user prior to being fed back for verification. That is, Gerson teaches an entire recognized partial sequence must be played back before a user can provide additional speech input. Thus, Gerson is deficient in providing an interruption function that allows a synthesizer audio output to be interrupted by user speech (Ans. 6). The Examiner cites Ammicht as teaching a "barge-in" function (FF 5) in a speech recognition system, enabling a speaker to interrupt an audio output from a system before it is fully provided (Ans. 6). The Examiner then asserts it would be obvious to one having ordinary skill in the art to combine the barge-in function of Ammicht with the speech recognition system of Gerson.

Appellants contend that Ammicht teaches a barge-in operation that determines whether the speech recognition system receives an utterance that is to be interrupted or is merely noise, and thus, is not performed to interrupt the recognition result prior to being fed back for verification (App. Br. 8). Appellants further contend that the barge-in is carried out during a prompt period rather than a recognition result period (App. Br. 8). We do not agree.

As stated by the Examiner, Gerson effectively prompts a user to verify a speech recognition result, thus the speech recognition result that is fed back is also a prompt. Gerson is therefore combinable with the prompt interruption operation of Ammicht (Ans. 6-7). Ammicht specifically states that the disclosed system, while outputting a prompt, has the ability to barge-in. This includes, while outputting a prompt, the ability "to listen to an unconstrained user input and make a determination that the user is trying to communicate something meaningful so that the system could stop speaking and begin taking the user-specific action." (Col. 2, ll. 19-28). Thus, Ammicht's barge-in feature does not wait for a prompt to finish (col. 5, ll. 26-28); rather it enables a user to interrupt a system prompt before it is fully provided to a user. Because Gerson teaches a speech recognition verification prompt in the form of a recognition feedback of a partial digit sequence, combining the barge-in feature of Ammicht with Gerson would result in Appellants' claimed invention. Under *KSR*, the combination of Gerson and Ammicht would be obvious since it does no more than yield predictable results – an interruption of a recognition result.

We therefore find that Appellants have not persuasively rebutted the Examiner's prima facie case of obviousness and all the limitations of claim 1 are taught or suggested by the collective teachings of the cited prior art.

Appellants provided no arguments with respect to claims 2-5, 10-15, 18, 20, 21, and 25-27 and thus, these claims stand or fall with claim 1. For the reasons set forth above we find claims 2-5, 10-15, 18, 20, 21, and 25-27 obvious over the collective teachings of the cited prior art.

Claims 6, 17, and 19

The Examiner rejected claims 6, 17, and 19 as obvious over the combination of Gerson, Ammicht, and Hou. Claim 17 is representative.[1] The Examiner finds that Hou "recites the ability to include a negative keyword in a user utterance to cancel digits that a user has spoken" (col. 10, ll. 42-58; Ans. 10).

Appellants disagree with the Examiner's assertion that Gerson, Ammicht, or Hue "disclose or suggest 'a negative utterance representation that is <u>included in the recognition result</u>' and 'the rejection criteria is met if the <u>negative utterance is included therein</u>', as recited in claim 17." (App. Br. 10).

However, Hou teaches that in response to detecting the utterance ("cancel") the received digits are discarded and the utterance is retransmitted (col. 10, ll. 47-58). Further, Gerson also teaches a negative utterance ("TERMINATE", "CLEAR") and their respective reply words ("BEEP," "REPEAT," and "TIMEOUT") are only representative as any command words may be chosen (col. 10, ll. 55-66).

Therefore, combining a negative utterance as taught by Hou with the speech recognition feedback ability taught by Gerson and the barge-in

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[1] Appellants have provided arguments only with respect to claim 17, thus claims 6 and 19 stand or fall therewith (App. Br. 10-11).

operation of Ammicht would have been obvious to one ordinarily skilled in the art to obtain claims 6, 17, and 19. We find claims 6, 17, and 19 obvious over the collective teachings of the cited prior art.

Claims 7, 8, 22, and 23

The Examiner rejected claims 7, 8, 22, and 23 under 35 U.S.C. § 103(a) as obvious based upon the teachings of Gerson, Ammicht, and Vanbuskirk. Appellants have provided no arguments with respect to Vanbuskirk and have relied on the arguments presented above with respect to Gerson and Ammicht. For the reasons set forth above with respect to Gerson and Ammicht we find claims 7, 8, 22, and 23 obvious over the collective teachings of the prior art.

Claims 9 and 24

The Examiner rejected claims 9 and 24 under 35 U.S.C. § 103(a) as obvious based upon the teachings of Gerson, Ammicht, and Larsen. Appellants have provided no arguments with respect to Larsen and have relied on the arguments presented above with respect to Gerson and Ammicht. For the reasons set forth above with respect to Gerson and Ammicht we find claims 9 and 24 obvious over the collective teachings of the prior art.

Claim 16

The Examiner rejected claim 16 under 35 U.S.C. § 103(a) as obvious based upon the teachings of Gerson, Ammicht, and Ladd. Appellants have provided no arguments with respect to Ladd and have relied on the

arguments presented above with respect to Gerson and Ammicht. For the reasons set forth above with respect to Gerson and Ammicht we find claim 16 obvious over the collective teachings of the prior art.

CONCLUSION

We therefore conclude that the Examiner did not err in rejecting claims 1-27 under 35 U.S.C. § 103(a).

DECISION

The decision of the Examiner rejecting claims 1-27 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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HARNESS, DICKEY & PIERCE, P.L.C.
P. O. BOX 8910
RESTON, VA 20195